"COMMERCIAL BANKING AND CAPITAL FORMATION"

A CRITICISM

An attempt to explain the relation of specific institutions, habits, and immemorial precepts to the fundamental processes of economic society is a praiseworthy effort at any time, but especially commendable in these days. Perhaps never before have so many people in the world been quite so "open-minded" toward new ideas. This unsettled attitude makes experimentation attractive and experience loses its authority. It is for this reason that an exhaustive inquiry into the essential functions of particular institutions and into the validity of accepted principles of economic conduct pursued to the very bases of the economic life of society has an especial value under the present circumstances.

In undertaking to bring about a better comprehension of the economic significance of the institution of banking and its relation to the creation of capital goods Mr. Moulton has performed[1] a real social service, for which he is entitled to the gratitude of his contemporaries. In the course of his keen analysis, moreover, he has succeeded in contributing not a little to the advancement of the science.[2] Nevertheless, I conceive that errors have crept in at points. All of them are traceable, it seems to me, to a confused, if not a false, notion of the relation of production to consumption. Disagreeing upon such a fundamental matter of economic theory from the views expressed by the writer I venture to state the reasons that do not permit me to follow him in his conclusions.

As old as production for the market is the notion that "spending," i.e., using one's income for the acquisition of goods intended

[1] "Commercial Banking and Capital Formation," *Journal of Political Economy*, XXVI, 484, 638, 705, 849.

[2] Cf. particularly the discussion of the relation of loans and discounts to the cash reserve (Part I, May, 1918); the reference to the investment features of commercial banking (Part II, June, 1918); directing attention to the want of any theoretical analysis of the institutional processes by which savings are converted into productive equipment (Part IV, November, 1918); and elsewhere.

for current consumption, is essential to the prosperity of the community. In a sense this notion is well founded. The production upon which one's income depends cannot be indefinitely carried on without a certain "cost." In the sense, then, that all producers must be consumers, if production is to be kept up, the notion is true. To this extent, at least, prosperity depends upon "spending."

But the proposition that the "spending" of income for directly consumable goods is essential to the prosperity of trade frequently brings in its train as an easy but unfounded corollary the assumption that the more of the income "spent" the more flourishing must be the condition of the community's trade. Malthus, it will be recalled, declared that "while it is quite certain that an adequate passion for consumption may fully keep up the proper proportion between supply and demand, it appears to be quite as certain that a passion for accumulation must inevitably lead to a supply of commodities beyond what the structure and habits of such a society will permit to be consumed."[1] Ricardo saw that this did not comport with his belief that capital was reproductive,[2] furnishing a demand for labor and goods, not alone in its initial commitment but indefinitely from its perennial fructification. But it remained for an acute Frenchman not only to point out Malthus' error, but to fortify his criticism by advancing an explanation that at once covered the industrial facts and did not violate the fundamental tenets of the classical system. J. B. Say maintained that the real difficulty in a "glut" was the underproduction of certain classes of goods with reference to others; or, putting it the other way around, these "other" goods were relatively overproduced. Every producer, he thought, must have in the very nature of things, so long as there exists free competition, the power to carry off from the market values equal to the value-products he has brought to the market.[3] But that there could be no such thing as an excess either of goods in general or of capital he was perfectly clear. "What limits the demand for productive equipment? It is the extent of production, and as the extent of production depends

[1] *Principles of Political Economy* (American ed., 1821), pp. 273–90.

[2] *Letters of Ricardo to Malthus*, pp. 38–42, 167–71.

[3] "Mélanges et Correspondance," *Lettres à Malthus*, pp. 630–36.

on the extent of the productive equipment the demand for productive equipment is increased in the same proportion as the productive equipment itself."[1]

As Say saw it, "gluts" were but the natural processes of correction for the maladjustment[2] coming from the over-exploitation of special fields. It would seem, thus, that the argument that the accumulation of capital may proceed too rapidly and lead to an overproduction of consumption goods and the attendant evils of depression had been "hit in the head" a century ago. It ought to have been thenceforth apparent that it is not consumption which limits production. Products buy products; and within any flexible exchange society the "will to produce" and the instruments for producing are the only economic limits to production. Nevertheless, the false doctrine of Malthus keeps cropping out even nowadays in the conversations of business men and in the fulminations of the editorial writers of the daily press. In these quarters no hesitancy is felt in passing from panegyrics upon the virtue of thrift to tirades against those who refuse "to keep money circulating" by "spending" their income.

In this broad form, however, the proposition is so obviously self-contradictory that professional economists of the recent past have seldom been guilty of embracing it. Rather the basic idea that consumption limits production has a tendency recurrently to appear among them dressed in a more seductive garb. With variations it is cut substantially along these lines: "a well-balanced economy will eschew equally excessive saving and excessive spending and seek a proper proportion in the division of income between these two ends." Carey,[3] Taussig,[4] Hobson,[5] Davenport[6] have all

[1] *Traite d'Economie Politique* (1st ed.), Livre IV, chap. v.

[2] It should be noted, perhaps, that Say's treatment of the problem of "gluts" is not being advanced as a complete and adequate exposition of the theory of periodicity of business. He had, in fact, very little to say about the causes of crises. He did not envisage economic problems in terms of pecuniary valuation and market psychology. But in its industrial aspects it is believed that he did set forth the true nature of what occurs during a depression.

[3] *Principles of Social Science*, III, 60–70.

[4] *Principles of Economics*, II, 45–50.

[5] *The Industrial System*, chap. iii and *passim*.

[6] *New York Times Annalist*, VI, 520.

expressed this view from time to time.[1] Mr. Moulton adopts the proposition whole-heartedly in the articles under review in these terms:[2]

> On the one hand, if the pecuniary savings of the people chance to be very small, not enough funds are released for the use of capitalists who wish to create new capital. . . . . This is overconsumption. . . . . On the other hand, if pecuniary savings are very large . . . . the "relentless" saving . . . . that has been involved serves to check the demand for the products of expanding industry and thus again to retard unduly the creation of new capital. A happy medium in the matter of pecuniary saving is therefore required—enough saving to furnish funds for increasing capital but not so much as to restrict unduly the demand for expanding industry.

From the point of view of the general prosperity and economic progress of the community (reservation being made of any reduction in individual efficiency), can men "spend" too little? Or, to put it in another way, from the point of view of the effect upon the market for the products of others can individuals "spend" too little? Both of these questions, if the following analysis is not fallacious, must be answered in the negative. We shall proceed always upon the assumption that whatever part of the income is not "spent" is "invested," i.e., placed at work somewhere to increase current income.

Let us take the illustration put forward[3] by Mr. Moulton: "Mr. Jones produces goods for Mr. Smith's consumption. Smith in turn produces goods for Jones's consumption. Now if Jones curtails his consumption in obedience to a thrifty impulse or a desire to secure a competency for old age he curtails the demand for Smith's goods and thus reduces Smith's production." But the fact that Jones does not continue to consume the products of Smith does not mean that Jones's purchasing power is withheld

[1] It will usually be found that in making such statements writers have in mind not alone the use of total income but the use of surplus income, or income above such deductions as the maintenance of a decent standard of living requires. Accounting terminology may help to make more incisive the distinction. The proposition is intended to apply not to "gross" revenue only, but to "net income" as well. For clearly no one would argue that due allowance should not be made for "operating expenses." So much was conceded at the outset in this paper.

[2] *Jour. Pol. Econ.*, XXVI, 879.

[3] *Op. cit.*, p. 853.

from the market altogether. It means only that having decided to practice thrift he has placed upon the market a fund of value which may be used, either by entrepreneurs who get possession of it through specialized investment agencies or by Jones himself, in a reproductive process where it constitutes a demand for Smith's products. The single proviso is that Smith will make the character of his products fit the demand which rules upon the market, i.e., meet the requirements of the free purchasing power. Of course, if Smith persists in producing goods that find no demand upon the market or the demand for which is low relative to the demand for the products of alternative pursuits then he will be relatively ill paid for his time and the use of whatever equipment he may possess. This necessity is not a new one introduced by Jones's altered disposition, however, but was operative from the beginning, i.e., in the exchanges antecedent to Jones's determination to be thrifty.

"While it is easy," the writer continues, "to see the interdependence of large consumption and new capital formation in this simple illustration of isolated individuals, such relationship is usually overlooked in the complicated specialization and exchange, etc." It is overlooked, it might be remarked, for the reason that the relationship does not exist. Mr. Moulton sees it only because he carries over from his preceding hypothesis of the primitive settler certain assumptions which are unwarrantable. They are not consistent with the assumptions introduced by the new hypothesis (of specialized labor, pecuniary incomes, divorce from the land, etc.). For the primitive settler, it was true, once the avenues of direct capital formation were closed the whole process of capital formation would cease. Again, where isolated individual laborers, Jones and Smith, are assumed, a slight reduction in the demand of Jones for consumable products made by Smith might leave Smith with no profitable employment for a fraction of his time.

Under the actual conditions which obtain where there is specialization of labor and specialized institutions for the collection and application of pecuniary savings, however, labor is automatically released from the production of consumption goods and drawn into the production of capital equipment in response to the

superior demand for the latter. One gets, if the assumptions of the hypothesis are made consistent, a fairly fundable mass of individual labor units (in place of the indivisible Smith), which like dollar units of capital flow with but relatively slight friction among the several fields of productive employment tending to find one level of remuneration, subject to the special modifying circumstances of each employment. Under these conditions the dire results to Smith, considered as this labor fund, from a reduction in the demand for the consumable products of Smith will not materialize. The purchasing power of Jones, which was formerly used to buy Smith's consumable products, will now with equal satisfaction to Smith be used to buy the capital equipment the production of which Smith has undertaken in response to the altered social demand schedule.

From the argument he has built up around this illustration Mr. Moulton would apparently be constrained to deny that any departure from the existing apportionment of income between consumable goods and capital goods in the direction of greater saving could fail to work economic injury to other producers. It is believed, however, that this does not truly represent his position and that in a final test he would agree with Taussig, whose exposition he cites[1] with approval. It ought to be perfectly clear that the production of capital equipment, in the first instance, will furnish employment to labor and a demand for consumable goods by those engaged in the undertaking, thus giving other producers a market for their products just as effective as in the case of the non-productive consumption of the income saved. So much is conceded by Taussig, but he contends[2] that this process of saving and capital formation has an economic limit. Overinvestment is in his view a real economic evil and a real, if not imminent, danger.

It is said that as soon as the initial addition to the capital equipment is made and placed in operation there will be found difficulty in marketing its consumable products because purchasing power is, upon the assumption that the new thriftiness continues, not being directed toward consumptive expenditure. The result will be, according to Taussig, "universal overproduction," by which he

[1] *Op. cit.*, p. 858. [2] *Principles of Economics*, II, chap. xli.

means "production beyond the possibility of sale at a profit." The fallacy[1] in this reasoning is essentially the same as that in the naïve overproduction theory. The difference is that in the latter misdirected production of consumable goods is mistaken for their overproduction, whereas in the former misapplied investment is mistaken for overinvestment. If the change in the importance people attach to future needs as against present needs (as evidenced by their reduced demand for consumption goods and increased demand for productive equipment) persists,[2] then it is clear that the new capital equipment must to a degree be used for the production of still more capital equipment[3] in order to satisfy their demand. If in the face of the lower discount of the future the whole of the new capital equipment that is added is specialized for the production of consumable commodities, or being of general adaptability is yet used for that purpose, then it will very possibly be used only at an economic loss. Apparently there has been overaccumulation and overproduction of capital equipment. Really just the opposite has occurred—a relative underproduction of durative goods. But it ought to be evident that there may be a progressive reduction in consumption and still no "overinvestment," provided the productive process as a whole is progressively transformed in the direction of the output of a larger and larger proportion of capital equipment.

It may be asked, "Is there no economic limit to the deferment of consumption?" The answer is that there is none save that which we have mentioned—the continuance of such consumption

[1] I confess that I am not positive that I have correctly interpreted Taussig's meaning. It depends upon the construction to be placed upon the terms "profit" and "loss." If he uses them in these paragraphs as he employs them elsewhere in his text to express the return to the entrepreneur for management and risk-taking his argument is fallacious. The deficit from operation will be fully made up by the negative interest and there will still be a possibility of sale at a profit. It is upon the assumption that he has introduced no new meanings for his terms in this passage that I have proceeded.

[2] If this be not granted there is no argument, since obviously if the demand of the savers for consumption goods is restored to its former scale the increment of supply will be offset by the increment of demand.

[3] See von Manteuffel's text, pp. 70–76, cited by R. Liefmann in "Theorie des Sparens und der Kapitalbildung," *Schmoller's Jahrbuch*, XXXVI (1912), 1596.

as is essential to the proper sustenance[1] of life. In economic theory the indefinite extension of the roundabout process is a logical aim. A society is conceivable in which men may for several generations (which means indefinitely) be content to get along with salt, bread, milk, and a loin cloth the while they are industriously and profitably engaged in the production of machines and equipment of every sort. Imagine how much capital could be devoted to paved highways, sewing-machine motors, the extension of the telephone service, mechanical conveyors in mines, factories and residences, etc.! Imagine a city fully equipped with district heating plants, a central vacuum cleaner station with tentacles reaching to every room of every household, a system of compressed air tubes for mail and package delivery!

It is to be noted that the rate of interest would under the circumstances decline. Indeed this cumulative process of adding to the supply of capital might conceivably eventually force the rate of interest to zero or even to a negative quantity. It is at least thinkable that our present knowledge[2] of the ways and means in which to secure economic results from time-consuming processes might not prove adequate to employ the constantly increasing funds in ways that would yield a surplus value. Production would then, it is true, be carried on nominally at a loss. But only nominally, since the negative rate of interest would express the will of the thrifty to make provision for the future even at a greater present cost. Such a condition was not uncommon in historical periods before the accumulation of knowledge of technological methods and of the properties of natural materials which has been characteristic of the past three centuries.[3] In any event it offers no bar to the continuation of production. Trade might still flourish even where negative interest obtained.

If the foregoing analysis of the relation of consumption to production be accepted what are its implications relative to the

[1] What this will amount to will vary, of course, in different epochs. In keeping with the humanitarian movement of our times a liberal margin should be left here for "human welfare."

[2] It should not be overlooked, however, that in view of the abundance of capital it would be a reasonable expectation that inventions would be stimulated.

[3] The matter of security undoubtedly played a part in this phenomenon also.

operation and control of banking practice? Before this is taken up word may be in point upon the consequences of a failure to grasp this basic principle of economic theory. Confusion here leads to an impasse later on from which the only escape is by further confounding the facts by specious reasoning. Mr. Moulton perceived and clearly expressed[1] this impasse: " . . . . [elsewhere] . . . . we had appeared to argue that the way to insure rapid capital formation was to keep consumption large; we now find, however, that curtailment of consumption is, in fact, necessary in order to release the funds required to create capital. We are thus face to face with an extraordinary dilemma." Truly! Instead of going back, however, to re-examine the false principle which brought him to this position, Mr. Moulton goes forward to find his way out by what appears to be a quite miraculous means, namely, the creation of capital without saving!

Properly interpreted and construed there would seem little ground for exception to the description of "the outstanding feature"[2] or the analysis of the economic functions[3] of commercial banking in the articles under review. Banks, it should be manifest, create capital only to the extent of the superiority of the banking method of settling exchanges and committing free funds to productive employment over the personal credit system and private investment. The capacity of the banks both severally and as a system to augment the volume of present purchasing power by giving demand rights against themselves in excess of the liquid assets in their possession is the measure of their credit (i.e., their borrowing power). It will be at once recognized, however, that it is not the measure of their contribution to the community's capital, since it is a fair assumption that the most of the personal credit which the banks guarantee and which is the principal basis of their own credit would circulate even in their absence. Undoubtedly there would be heavier losses where "futurities" were handled by non-specialized credit agencies. Whatever is saved by the banks in this way, is the amount, *ceteris paribus*, which is set free for increasing the capital equipment of the community. It

[1] *Op. cit.*, p. 866.

[2] *Op. cit.*, pp. 497–507.

[3] *Ibid.*, Parts II and III.

follows that neither to the extent of the total lending of commercial banks, nor to the extent their loan fund is used for investment purposes is there creation of capital "without antecedent saving upon the part of consumers."[1] The sole source of capital is saving.[2]

We come thus to the consideration of the relation of commercial banking, conceived as an institution for the collection and utilization of pecuniary savings and personal credit, to the world of commerce and industry. In the first place, if commercial banks are to function properly they must see that the funds of free purchasing power at their disposal are employed reproductively. The funds were not created by the banks. The banks are only the agents empowered to direct their utilization in the productive process. How shall they be used? Clearly this free purchasing power must not to any considerable extent be placed where it will be used directly for the consumption of the existing stock of goods. The banking system which permitted any appreciable part of this fund to be used in such a way would be violating the trust imposed upon it. It would not as an agent be following the wishes of its principal. In a short time it would inevitably sink into disuse if not insolvency. The supply of the fund would not long be maintained and the effective demand must sooner or later fall off under such circumstances.

It is commonly believed, however, that commercial banks should restrict their advances to commercial loans, properly so-called, in order that they may have self-liquidating assets to meet their demand obligations. The error of this view attested alike by theoretical analysis and by actual practice has been so clearly demonstrated[3] by Mr. Moulton that it would indeed be vain for

[1] *Op. cit.*, p. 869.

[2] In his article on "Theorie des Sparens und der Kapitalbildung" (*op. cit.*, pp. 1578–80) R. Liefmann shows that the very definition of saving, "income allowed to become capital" implies its identity with capital. Capital is thus definable as saved income. According to Liefmann, however, not all savings will actually result in capital formation from the social-economic point of view, even under the assumption of ideal conditions in a competitive market. The exception is where savings are applied not to the extension of capital equipment but to the substitution of new capital equipment for old (pp. 1610–26). Since this is a phase of the question not treated by Mr. Moulton, the validity of the foregoing view need not here be considered.

[3] *Op. cit.*, pp. 638–63, 705–31.

me to attempt to improve upon his presentation. All that I wish to point out is that the conclusions he has drawn from his analysis regarding the economic service of the banking system seem ill founded. He concludes that[1] what is necessary to insure the maximum rate of production of capital equipment is some regulation of individual expenditure to prevent alike overspending and oversaving. The whole purport of the analysis would seem to me, rather, to point toward the conclusion that what is necessary to the given end (assuming that all the encouragement possible in other ways has been given to individual thrift) is a regulation of banking policy which will insure the use of the bank loan fund in the production of consumable goods and capital goods in exactly the proportion among the different kinds of each class and between the two classes that the discounting disposition of consumers as evidenced in the effective demand on the market requires. This proposition is far from conceding the point urged by Mr. Moulton that there may be oversaving. The fact that banks through the application of their loan fund may bring about a disproportionate production of capital equipment could be construed as proving the possibility of oversaving only upon one assumption, namely, that banks are the creators of these savings. As we have seen, however, this assumption is entirely unfounded. Banks are the agents who direct the productive employment of the sporadic savings of their depositors. If in the discharge of this function they miscalculate the trend of demand, and particularly the discounting tendencies, on the market there may develop an industrial situation that calls for drastic readjustment. But under no just perspective could this be viewed as the outcome of too much saving.

The chief guide of the banks in discharging this heavy responsibility which goes with the management of the loan fund is the bidding of entrepreneurs. The latter are the primary interpreters of the manner in which the current social income stream is to be divided. But their estimates are subject in large measure to the review[2] of the managers of the banking system. The disposers of the fund of free purchasing power are finally responsible for its distribution in such a way as to meet the discounting (among other

[1] *Op. cit.*, pp. 879–80.

[2] See Mitchell, *Business Cycles*, p. 34.

dispositions) of the market,[1] i.e., in such a way as to avoid wasteful production. The faults, such as they are, of the system of commercial banking in relation to this economic function do not arise, it seems to me, from any inherent tendency to provide funds for the creation of capital goods to the prejudice of the production of consumable commodities, or vice versa.[2] Rather, they arise from the weakness of the system in bringing to bear upon this problem of adjustment full information and clear-sighted comprehensive planning. There is no machinery[3] provided to this end. There is no centralization of this responsibility, nor of information which would aid in discharging it.[4] It is all left to the judgment of individual bankers.

It occurs to the present writer that in so far as the management of the banks' loan policy has been responsible for the break in the upward swing of the business cycle, it may be traceable to mistaken estimates of the sort above described. This is contrary to the general assumption of an absolute overextension of credit,[5] which, however, it is not denied might take place. Even under such circumstances the capital equipment produced would, presumably in all cases, yield an interest return when employed in production. The difficulty comes in the sale for profit of capital equipment which people produce without any intention of using themselves.

[1] The problem is not a static one. It is a question of what will be the changes, if any, in the rate during the time interval between any "application" or "commitment" of a portion of the fund of free purchasing power and its fruition in marketable products. Cf. H. Clay, *Economics for the General Reader* (American ed.), pp. 228–33; Ely, *Outlines of Economics*, pp. 513–23.

[2] In certain seasons one tendency may develop, in other seasons the other, and there is no inevitable, logical sequence in the course of events, before which the directors of the competitive system of production are powerless such as is contended by Carver, *Principles of Political Economy*, pp. 35–37; Spiethoff, "Vorbemerkungen zu einer Theorie der Überproduktion," *Schmoller's Jahrbuch*, XXVI (1902), 721–59.

[3] While the Federal Reserve System might be adapted, at present it operates in this direction only secondarily, through the provisions regarding rediscounting.

[4] See in the February, 1919, issue of this *Journal* the highly illuminating suggestion on this point of Mr. David Friday, who approaches the same problem from the opposite side.

[5] "The real cause of trade depression is generally admitted to be over-speculation and the over-extension of the credit system" (Conway and Atwood, *Investment and Speculation*, p. 420).

The condition would simply be this: the value of the anticipated yield of such capital equipment capitalized at the market rate of interest might amount to less than its cost of production.

In any event it certainly is true, as Mr. Moulton insists,[1] that the formation of capital goods is retarded during the period of depression which follows the crisis. Moreover, it cannot be denied that a decline in *consumptive demand* contributes to this result. But anyone who is willing to "follow through" on this line of thought must recognize that the underlying cause, of which the decline in consumptive demand is only an incident, is the general cessation of production which provides the sinews of *any demand*.[2] When from the exuberance of some entrepreneurs there comes about a relative overproduction of one or more lines of goods or even a general overproduction of capital equipment relative to consumption goods[3] there must be retrenchment and loss in these directions. There is set in motion a series of market repercussions which eventually demoralize production in all lines. This stagnation is ultimately traceable, it should be evident, to a failure correctly to anticipate and adjust the productive process to the "spending" and "saving" disposition of the recipients of income. The difficulty is not in relating individual demand schedules to the exigencies of an inflexible productive program. The difficulty is in adjusting the productive program (which is largely controlled by the disposition of the banks' loan fund) to the private plans for the utilization of income.

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A REJOINDER

Mr. Watkins' criticism of my recent analysis of certain phases of the problem of capital formation is very welcome, for it gives me the opportunity to clarify certain points about which there seems

[1] *Op. cit.*, pp. 875–78.

[2] The same reasoning applies, *mutatis mutandis*, to the course of events during the expansion period.

[3] Perhaps it should be emphasized, though it ought to be perfectly evident, that this is only a species of the genera "maladjustment." These views are believed to be in substantial accord with those presented by Mrs. M. T. England in her article, "Promotion as the Cause of Crises," *Quarterly Journal of Economics*, XX, 752–61, 766–67.

to be some general misunderstanding and to emphasize what I do and what I do not stand for. It was, I suppose, to be expected that there should be no little misinterpretation of the drift of the argument and the nature of the conclusions. The analysis was not only unusually complex and published at intervals extending over several months; but it ran counter as well to some of the most cherished traditions of political economy and therefore was inevitably provocative on the part of some of a hostile and superficial reading rather than a sympathetic and careful study. It is frankly admitted, however, that the exposition was in many respects faulty. But in the numerous instances where I have had an opportunity to thresh the problem through with economists in informal discussion there has been revealed, thus far, no fundamental unsoundness of position. A restatement of certain points which numerous readers appear to have misinterpreted may therefore serve as a useful preliminary to a consideration of the validity of Mr. Watkins' criticisms.

1. Do I contend that the "relentless" pursuit of thrift on the part of everybody will not promote rapid capital formation? I do. The rapid creation of new capital (speaking generally) is dependent upon a rapid expansion of consumption.

2. Do I contend that it is impossible to spend too much, to have too rapid an expansion of consumption? On the contrary, I strongly insist that (except when, during transitions, an expansion of commercial banking funds provides the means) funds must be diverted from consumption channels to investment institutions if the entrepreneur is to have the means of financing new capital construction. There must therefore be a happy medium in the matter of consumptive spending.

3. As a practical matter do I advocate an increase of spending or an increase of saving? What do I think ought to be done? I was not, in these articles, an advocate at all; I was merely an expositor of certain phases of the organization of society. I suspect, however, that the answer to the foregoing query would be that sometimes it would be socially advisable to increase aggregate consumption, and sometimes it would not. I am inclined to think, also, that there is quite as much danger of oversaving (in the aggregate) as of overspending.

4. Do I contend that it is possible to increase capital goods by *diverting* income from saving to consumptive spending and thus diverting energy from the creation of capital goods to the creation of consumption goods? No; it is not through *diversion* that the increased capital formation is effected; it is by the utilization of energy that would otherwise be unutilized. The assumption that 100 per cent of our energy is always utilized and that hence an increased production of consumption goods necessitates a decreased production of capital is an unwarranted assumption. What occurs in the upward swing of the business cycle, for instance, is an increased production of both consumption goods and capital goods.

5. If society could once strike the "happy medium" between spending and saving (but this would be a mere chance strike) would everybody, allowing for maladjustments, find employment in producing either capital or consumption goods? I do not believe so. The fact that restrained consumption is necessary (except when, during transitions, and expansion of commercial banking funds provides the means) in order to release funds for capital formation (and to make provision for old age) tends to check the profitable creation of new capital. This results in a slack demand for labor and much unemployment. A portion of our social energy, both labor and capital is unutilized. In the world as it is capital formation is of course intermittent, increasing and decreasing with the rhythm of business activity. Hence at times labor is fully employed; at other times it is not. The business cycle aside, there would be a permanent residuum not able to find employment owing to the process by which capital is formed in a pecuniary society. At a subsequent reorganization of the articles and an elaboration of their implications I hope to make this conclusion entirely clear.

6. Do I contend, finally, as Mr. Watkins appears to believe, that we can have through the creation of bank currency the "miracle" of the creation of capital goods without saving? The truth is that capital is not strictly speaking formed by saving; it is the result of the application of energy to the creation of capital goods. A reduction of consumption is not always a necessary antecedent. For if otherwise unused resources of energy are

employed in the creation of capital goods we can have capital formation, not without work, it is true, but without a diversion of energy from the production of consumption goods. This is where the commercial banking mechanism touches the problem. The expansion of bank currency resulting from the improvement of the banking mechanism has, I believe, during a period of transition, been responsible for tapping energy that would otherwise have remained unused and putting it to work in the creation of capital goods. The fact that these funds were made available without a reduction of consumptive demand has made possible a more rapid rate of capital formation than would otherwise have occurred.

As to the pertinency of Mr. Watkins' criticisms. We part company in the illustration of Jones and Smith, two *isolated* individuals producing solely for each others' consumption. All my subsequent "fallacies" appear to be due to a failure to reason correctly in this hypothetical case. The explanations of Mr. Watkins' dissent is, I believe, to be found in part in his failure to understand correctly the hypothesis. In the illustration in question I had assumed that Jones and Smith were the *only* individuals extant. Mr. Watkins admits that a reduction in consumption by Jones, for example, would reduce the direct demand for Smith's goods; but he adds that Jones will "place upon the market a fund of value which may be used, either by entrepreneurs who get possession of it or by Jones himself, in a reproductive process where it constitutes a demand for Smith's product" (p. 582). It is to be noted that Mr. Watkins arrives at his conclusion by *un-isolating* Jones and Smith and introducing third parties, who, by hypothesis, do not exist.

But is not an illustration of the sort used unreal and therefore worthless? The purpose of the illustration was merely to simplify a complex situation and get beneath the monetary camouflage which so often obscures underlying economic processes. The validity of such an illustration must of course be tested by its applicability to the world of actuality. I had thought that if we multiply Jones and Smith by 50,000,000 each we would have a

rough view of society as it is: 50,000,000 Jones's producing goods for 50,000,000 Smiths, and vice versa. It had seemed to me that the volume of goods that would be produced by the Jones's would very directly depend upon the volume of consumption demanded by the Smiths; that if the consumption of the Smiths should decline so that the Jones's would not find a demand for the full output of their existing productive equipment they would be disinclined to devote their spare time to creating additional capital goods. It does not seem to me that one can fairly shift the necessity of expanding consumption to somebody else, when everybody is already included in the reckoning.

Mr. Watkins argues that "Jones himself" might still exercise the necessary demand for Smith's goods, even though he reduced his consumption; Jones would demand capital goods and Smith would thus devote a part of his time to creating capital. This brings us to the real heart of the problem. Mr. Watkins' major point is that consumption need not increase in order to insure a demand for the product of additional capital goods. One form of capital goods creates a demand for another form of capital goods, and hence increased consumption is not a necessity. Overthrift is impossible, in Mr. Watkins' view; any reduction in consumption demand merely "automatically" results in diverting the energy released from the production of consumption goods to the production of capital goods (p. 582). There is therefore no economic limit to the deferment of consumption, except what is imposed by fundamental physiological requirement (p. 584). He insists, in opposition to Taussig, that "relentless" saving could continue indefinitely, that, indeed, "in economic theory the indefinite extension of the roundabout process is a logical aim" (p. 585).

This is a good example of what some of us are pleased to call irrelevant theory. For whatever may be the logical aim of Mr. Watkins' type of theory the aim of the business manager who controls the extension of the roundabout process is to avoid losses and make profits. Unless Mr. Watkins can show that in practice new capital can profitably be created in the absence of expanding consumption his theoretical statement is worthless.

His attempt to show that capital can be extended indefinitely without an increase in consumption is very interesting. He

attempts to show this by further irrelevant theory. If the rate of discount of the future decreases, that is, if people reduce present consumption, "labor is automatically . . . . drawn into the production of capital equipment in response to the superior demand for the latter" (p. 582). This may again be good logic, but since the people who control the creation of new capital in industrial society are governed not by the social rate of time-preference but by short-time profit considerations, it has little bearing on the problem in hand.

What Mr. Watkins fails to perceive here is that when present consumption is reduced it is not because those who reduce consumption have a "superior demand for capital goods." They are merely postponing their demand for the products of capital goods. But the entrepreneur who constructs the new capital is dependent upon *immediate* sales for his profits. He cannot wait for the roundabout process to be extended indefinitely. If one assumes, as Mr. Watkins does, that the produce of the new capital equipment is not consumptive goods but other capital goods, it remains to prove that there will be in fact an active demand for such capital goods.

Let us see what is involved in the notion that the increased demand required may be for capital goods. It has been estimated[1] that about 95 per cent of our social energy that is expended each year is devoted to the creation of consumption goods and 5 per cent to maintenance and the creation of new capital. Let us assume that as a result of great thrift the demand for consumers' goods is steadily reduced so that the energy devoted to their production is gradually reduced over a period of years to the following percentages: 90, 85, 80, 75, 70, 65, 60, 55, and 50, etc., to the minimum required for subsistence. Would the energy thus released be devoted to creating new capital so that the per cent going to capital formation would increase as follows: 10, 15, 20, 25, 30, 35, 40, 45, 50, etc.? Mr. Watkins thinks that it would.[2]

New funds are undoubtedly thus made available for the creation of capital. But will the capital eventuate in the face of a steadily

[1] See H. Gordon Hayes, *Jour. Pol. Econ.*, December, 1918, pp. 941–51.

[2] Carver also takes this stand very emphatically in a recent philippic. See *Quar. Jour. Econ.*, February, 1919.

decreasing volume of consumptive demand? Mr. Watkins is an entrepreneur and now has his opportunity to increase the productive equipment of society. Existing factories are operating at about normal, that is, at perhaps 75 or 80 per cent capacity. If Mr. Watkins, and all other entrepreneurs, knew that there was to be no increase in consumption of any known kind, but rather a decrease, and no increase in any new kind of consumption, would he or any other entrepreneur dare incur the tremendous fixed charges involved in building a new factory? On Mr. Watkins' hypothesis this new factory will have to manufacture capital goods for the use of other producers of capital goods. Is he sure that other producers of capital goods requiring his product in sufficient volume to warrant the assumption of the heavy fixed obligations involved will eventuate? Bear in mind that all of these other producers of capital goods are in turn dependent upon an unknown demand for capital goods; and each of them must figure his chances of being able to meet his fixed obligations and secure profits upon the development of unknown types of demand. Under such conditions in the world of hard reality the process of expanding capital could hardly be expected to start.

If Mr. Watkins and the other entrepreneurs did not know that there was to be no increase in consumption anywhere, would they not start building new capital goods, induced by false hopes, some of it of existing kinds and much of it of new forms, and then could not the process, once under way, continue indefinitely?

It requires only the slightest acquaintance with the practices of modern business to know that the risks of plunging ahead in this fashion in face of a present decline in consumption (and this is sure to be a known fact) are almost always an effective estoppel to capital formation. The business manager is responsible to those who place him in his official position. He is held accountable for his failure to show returns. Moreover, the corporation is dependent upon borrowed money and those who hold the purse strings are not in the habit of making loans for uncertain ventures.[1]

[1] Note that the building of the plant must usually have the approval of investment bankers; and that the commercial banker holds the veto power through control of the sources of working capital.

There is usually a small amount of capital created in an experimental way, that is, new types of equipment for producing known types of goods; and new types of equipment for creating new types of goods for which it is hoped a demand may be found. But such experimentation in capital formation is very small quantitatively, at best, and is in fact always smallest when consumptive demand is lowest. That is to say, when there is an active demand for additional consumption goods, the chances that the entrepreneur can make profits upon such experimental capital are substantially increased.

This argument that the reciprocal demands of different forms of capital goods can cause an accumulation of capital for long periods of time unattended by an expansion of consumption has often been advanced. But one always runs into difficulties when he tries to become specific. Mr. Watkins is no exception to the rule. On page 585 he says: "Imagine how much capital could be devoted to paved highways, sewing-machine motors, etc.!" Most of the cases cited, however, would seem to involve an increase of consumption. One wonders if Mr. Watkins, for instance, would borrow funds at 6 per cent and build residences which "for several generations (which means indefinitely)" no one would use.

There is no evidence in modern industrial history that new capital is ever formed rapidly when consumption is not increasing. It is almost always a large consumptive demand, due to some fortuitous event, that inaugurates an era of rapid capital formation.[1] Eight pages of my article were devoted to showing the close relationship that always exists in practice between expanding consumption and capital formation. This Mr. Watkins ignores with a single exception, in connection with the business cycle.

The underlying cause of expansion and contraction in business activity is not due to changes in consumption, says Mr. Watkins, but to changes in production (p. 590). This confusion of the relationship of consumption and production Mr. Watkins regards as the basis of my entire false analysis. The true theory, he holds, is that production creates demand, and consumption is a result,

[1] Once started in this wise the demand for intermediate products of course plays no mean rôle, as I clearly indicated in Part IV.

not a cause of production. This is an old argument, and it was recently stated by Professor Friday in connection with a discussion of the present industrial depression.[1] Start production and consumption will take care of itself. Of course it is true that we must have production if we are to have consumption; but it is just as true that without consumption no one will go to the trouble of producing. The true theory is that production and consumption are interdependent. But, as society is now organized it is mainly *present* consumption that induces *future* production. Let us be specific. At the present time this country has an abundance of producing power. The orders on the books (and production is largely to order, actual or assured) are, however, insufficient to warrant running the plants at say more than 60 per cent capacity. The business man will produce more if assured that the goods could be sold. But he dare not go ahead and produce at full capacity on the hypothesis that everybody else will do the same and that in consequence the wages paid will be used in buying the goods produced. If the demand for iron and steel should increase, however, as a result of European reconstruction orders, the iron and steel plants would hire more laborers. When these laborers begin to spend their wages for victrolas (as happened during the war) then the production of additional victrolas will begin; and so on around the circuit with other commodities.

Whatever may be the initial cause of the beginning of depression in the economic cycle—grant that it is a curtailment of production, somewhere—the cause of the rapid lessening of production in general is the fall in demand for consumptive products. Mr. A's wage-earners being thrown out of work cease to buy the goods of B, C, and D, and hence B, C, and D must restrict production, with ensuing decreases in consumptive demand for the products of industry generally.

Even if we were to accept the doctrine that production always precedes and gives rise to an increase in consumption, it would still not follow that capital formation increases as consumption decreases. In discussing the business cycle, Mr. Watkins gives away his entire case. He admits that consumption is steadily

[1] See *Jour. Pol. Econ.*, February, 1919.

increasing—whether cause or result is now immaterial—during the upward swing of the business cycle when capital formation is rapid.[1] To be consistent he would have to argue rather that consumption was actually on the decline at such a period, for his whole thesis is that we can get an increase of capital creation only through a decrease in the production of consumptive goods. To show that an increase of consumption has nothing to do with an increase of capital formation he would have to show that business men would continue to increase the supply of capital during such a period if consumption were decreasing rather than increasing. In fact, the assumption usually lies in the back of his mind that consumptive demand is increasing when capital formation is increasing.[2] He openly admits that when consumption declines after a crisis this has something to do with halting production, and the creation of additional capital. According to his theory this reduction in consumption should automatically result in an increase of capital goods (cf. quotation, p. 595).

In conclusion, it occurs to me that what misleads Mr. Watkins and many others in connection with this problem is an original assumption with reference to saving. Mr. Watkins says that "we shall proceed always upon the assumption that whatever part of income is not 'spent' is 'invested,' i.e., placed at work somewhere to increase current income" (p. 581). It would seem offhand that the fact that money that is saved is not hoarded in these days but invested is proof that whenever consumption is reduced the production of capital goods must automatically be increased. Why otherwise should one be able to make an investment? Would

[1] This of course could not happen if a reduction in consumption were always a necessary antecedent to capital formation. The "miracle" of a simultaneous increase in consumption and capital formation is obviously explained by the fact that an increasing percentage of our social energy is being utilized.

[2] It is only when he becomes metaphysical that he forgets this, as on p. 584, when he says: "It ought to be evident that there may be a progressive reduction in consumption and still be no 'overinvestment,' *provided* [italics mine] the productive process as a whole is progressively transformed in the direction of the output of a larger and larger proportion of capital investment." It all hinges on the proviso. Good logic again but poor economic theory because it ignores the motivating forces of industry. Mr. Watkins even gets around this difficulty, however, by another assumption, that of the *will to produce*.

business men pay interest on our investments if they were not finding it profitable to create capital through the use of those funds? Superficially it looks axiomatic that money that is invested is automatically "spent" for capital goods.

But the truth is that by no means all the funds that are saved are employed in creating capital. Corporate savings are not under all circumstances automatically put to work in producing additional capital. A large balance often accumulates in the bank, its productive use being delayed until the market conditions look more favorable.

The savings of individuals are not always automatically put to work in creating capital goods. If placed on deposit there is no assurance that the banks will not have difficulty in placing these funds if business is dull and the demand for new capital therefore inactive. The ratio of cash reserves to loans and investments in the banking system may be increased rather than capital goods. This is precisely what happens in a period of depression.

Particular attention should be directed here to an "unseen" factor of very great importance. Since, in fact, any individual who saves can always invest his funds at interest somewhere it would seem to follow that all the funds not used in the creation of consumptive goods are usually being spent for capital. But in a period of declining consumption followed by lessened production, as is the case during a period of depression, the volume of savings funds seeking investment is greatly reduced. Granted that all that is saved finds investment, it by no means follows that all the energy released from the creation of consumptive goods is now devoted to the creation of capital goods. The "unseen" thing is the reduced volume of funds that may be saved; both business profits and wages are decreased during a period of declining consumption. But if these funds are spent neither for consumptive or capital goods, if both spending and saving are less, where *are* the funds? The answer is that they are lying idle in the reserves of banks, largely of the commercial banks, which are the final reservoir of our financial system. Idle with these funds are capital equipment and labor power.

H. G. MOULTON

AN ANSWER

Are the scientists, as it is said the artists of our day are doing, seeking the new rather than the true? I must confess that it was with consternation and chagrin that I read Professor Moulton's rejoinder to my criticism. Let me briefly take up a few of his more important points.

He complains that I have failed to comprehend the limits of his premises in the Jones-Smith illustration. On the contrary I explicitly recognized the assumptions to which he refers, and attempted to prove that not all of these assumptions could be accepted as part of a hypothesis which would have any conceivable significance as a simplification of the actual situation. He endeavors now to justify all of these same assumptions, however. He says:[1] "I had thought that if we multiply Jones and Smith by 50,000,000 each we would have a rough view of society as it is; 50,000,000 Jones's producing [as a body] goods for 50,000,000 Smiths [as a body] and vice versa." A rough view indeed! But even if for the sake of the argument the hypothesis be accepted, far as it is from the actual situation in which single individuals or groups produce for a market, i.e., a great many other individuals or groups acting independently one of another, the fallacy in Mr. Moulton's reasoning only becomes more manifest. Clearly the Smith group will be compelled to produce what the Jones group demands since they cannot hope to dispose of their products elsewhere. If the Jones group cease to offer their products in exchange for ostrich plumes, rouge, and silk stockings, and instead demand farm tractors, incubators, and cream separators, it would seem to be the part of common sense and good business for the Smiths to discontinue their former production and take up the new line. Why they should be "disinclined to devote their spare time to creating additional capital goods" is beyond my comprehension, unless their own attitude toward the products being offered them by the Jones's has undergone some unexplained change. At this point (p. 594), however, Mr. Moulton executes a clever coup de grâce. Without any warning he nimbly shifts his ground

[1] The phrases in brackets are inserted by me.

from the rarefied atmosphere of his exaggerated hypothesis to the world of actuality, with business managers, competition, etc. This was forced upon him as the only alternative to an unpleasant admission. My original criticism of this illustration, therefore, still stands and I leave its validity to the unbiased judgment of fellow-craftsmen.

I should like, also, to ask Mr. Moulton just what he means by the passage: "The aim of the business manager who controls the extension of the roundabout process is to avoid losses and make profits.[1] And unless Mr. Watkins can show that in practice new capital can profitably be created in the absence of expanding consumption his theoretical statement in worthless." Surely he cannot carefully have read pages 585 to 590 of my criticism, or he would not have fallen again into this very error. I tried very clearly to distinguish there between the falling rate of interest which would almost inevitably attend any general increase of saving and the maintenance of the rate of profit upon which the continuance of competitive industry depends. Since I am sure that Mr. Moulton cannot be deliberately clouding the issue here,[2] I must conclude, if I may be permitted to paraphrase the author, that he "offers a good example of what some of us are pleased to call unsound theory." Does he think that "new capital" is "created" by the business managers? Can it be that he wants me to prove that new capital can be created indefinitely by savers without having any effect upon the rate of interest? Does he doubt that the emergence of those profits of the business manager to which he points as the goal by reference to which our industrial system is manipulated is contingent upon the placing in the market of the goods for which the greatest demand develops? If there were a sudden cessation in the demand for tobacco, some of these business managers governed by short-time profit considerations would be displeased and inconvenienced, but would not some others be greatly stimulated? Bankers, safemakers and breakers, steel producers, real estate dealers, engineers, *et al.*, presumably would not regard this "absence of an expanding consumption" as prejudicial to "prosperity" and "progress."

[1] P. 594.

[2] See also pp. 599–600.

Regarding the proposition that the sole source of capital is saving, Mr. Moulton appears to believe[1] that this implies a necessary *reduction* of consumption. He says my "whole thesis is that we can get an increase of capital creation only through a decrease in the production of consumption goods." This is a complete misconstruction of my position, and seems to flow from the false notion of saving which Mr. Moulton entertains. I am quite sure that most economists have never taken his view of the nature of saving, and I am positive that I intended no such meaning in making the statement. The saving that gives rise to capital need not bring a restriction of the scale of consumption of the immediate past. But saving always and everywhere does imply the use of energy that *might* have been applied to present consumption to the production of future goods, capital. Thus the discovery of new sources of economic energy or the application of improved methods may permit the increase of the production of capital goods.[2] And if we assume the old level of consumption to remain the same while this is occurring there has been a "saving" here just as truly as though the new capital had come from a retrenchment in the current standard of living. But in no way can capital be produced without saving, i.e., using economic energy for capital formation that might otherwise be devoted to the enlargement of current consumption.

However, the real reason, I believe, that Mr. Moulton refuses to admit the validity of my criticism is not because he can find faulty reasoning therein but because he does not accept certain of my premises. His answer may be summed up substantially as follows: Saving is not always socially desirable, because what is saved will not under all circumstances eventuate in an increased supply of capital equipment. He accuses me (p. 594) of thinking that it will. I think nothing of the kind and have never so stated. Rather I assumed it. I am quite willing to grant that there may

[1] See p. 599.

[2] The quickened capital formation during the period of rising prosperity in the business cycle is due to such factors as these, I believe, coupled with a fuller utilization of existing productive agencies, and I do not see how I am logically bound to argue that consumption must be declining during such a period.

be a certain amount of hoarding, not only individual but institutional, and there is always a certain friction in the process of converting saved funds into capital equipment. Banks act sometimes like mighty misers. Even entrepreneurs are subject betimes to peculiar psychological states of which doubtless much could be learned by a careful, concrete, and comprehensive study. But for the purpose of an abstract inquiry is it necessary to be continually qualifying one's statements throughout the course of an argument by making explicit allowances for these modifying conditions? Of course, we have imperfect economic machinery. Of course, we have illogical actions among the economic prime movers. No one denies it. But does that prevent us from making any logical assumptions? To take such a stand is equivalent to asserting that the whole business world is a hodgepodge, that there is no reason in it, and consequently one can get no rational explanation of it.

But that is not all. Let us see what is the result when undue emphasis is placed upon these modifying conditions and tenable generalizations are neglected. Saving is not at times socially desirable, it is said, because savings will not at times result in an increase of capital goods. Savings will not at times result in an increase of capital goods, because business men will not undertake investments for the production of capital goods at those times when the demand for capital goods is low. The demand for capital goods is low, inhibiting the activities of entrepreneurs, at those times when savings are not socially desirable, because there is a reduced volume of funds saved at such times. There is a reduced volume of funds saved at such times, because, etc. Of course, it may be that there is an invisible factor in this reasoning which makes it perfectly sound for some minds.

MYRON W. WATKINS

A COMMENT

Mr. Watkins' answer requires only a brief comment. I confess I am a bit surprised that he should scout the idea that our industrial society is one of specialized production and exchange, that we do produce for each other's consumption. With reference to Jones and Smith it is quite true, as Watkins says, that *if* the Jones group

demand capital goods instead of consumer's goods, the Smiths would do well to produce such goods. But the issue rests with this *if*. Mr. Watkins' logic is correct, but he assumes (in the *if*-clause) the very point to be proved.

Mr. Watkins has made the belated discovery that my objection is not to his reasoning but to his premises. I say belated because the entire purpose of my original article was to subject certain prevalent assumptions to the test of economic actuality. I had thought that Mr. Watkins was endeavoring to show that my analysis of the actual process of capital formation was faulty. But it now appears that he was merely reiterating the assumptions which I attacked and then endeavored to show that, granting those assumptions, my conclusions do not follow. His analysis of paragraph 3 of the answer involves similar assumptions which I believe to be unwarranted. Mr. Watkins, being a pure theorist, is not concerned as to whether they are warranted or not. His major premise has been that a curtailment of consumption automatically shifts energy from producing consumption goods to the creation of capital goods (p. 582; assumed again in paragraph 2 of his Answer). But in paragraph 5 of the Answer he emphatically denies that he believes the assumption to be entirely warranted: "I think nothing of the kind. Rather I assume it." Mr. Watkins stands for truth; one wonders how he is certain that truth is to be distilled from admittedly faulty premises.

There is doubtless some value to be derived from exercises in logic which proceed from assumptions, the truth of which are unproved and even doubted, and I have no objection to metaphysical disquisitions of this kind, *provided* one does not finally presume to explain thereby the actual economic organization of society.

H. G. Moulton